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EXAMINER
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BARNIE, REXFORD N

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/645,206  
Filing Date: August 25, 2000  
Appellant(s): BREMER ET AL.

**MAILED**  
JAN 04 2005  
**Technology Center 2600**

Raymond Armentrout  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 09/23/2004.

**(1) *Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

**(2) *Related Appeals and Interferences***

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

**(3) Status of Claims**

The statement of the status of the claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Invention**

The summary of invention contained in the brief is correct.

**(6) Issues**

The appellant's statement of the issues in the brief is correct.

**(7) Grouping of Claims**

The rejection of claims 1-65 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

**(8) Claims Appealed**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9) Prior Art of Record**

4,669,116	AGAZZI ET AL.	05-1987
5,502,391	SCIACERO ET AL.	03-1996

6,176,742

ARNETT ET AL.

01-2001

**(10) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Claims 1-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted prior art (see fig. 2) in view of {Sciacero et al. (US Pat# 5,502,391) or Arnett et al. ('834 or '742)} and further in view of Agazzi et al. (US Pat# 4,669,116).

Regarding claims 1 and 37, Admitted prior art of record teaches a digital communication wherein mutual coupling can cause crosstalk and fails to teach a cross-talk compensation circuit made of capacitive means as a form of reducing crosstalk. Reducing crosstalk is notoriously well known.

Sciacero et al. teaches an apparatus for measuring the crosstalk in a cable associated with a network by using capacitive circuit for the purpose of reducing crosstalk caused by coupling effect in (see fig. 3B, col. 3 lines 12-17, col. 5).

Arnett teaches a capacitive crosstalk compensation arrangement for communication connectors wherein a capacitive circuit can be used in preventing cross-talk caused by mutual coupling associated with a plurality of conductors in (see fig. 6 and disclosure of '742). Also, '834 teaches a connector which provides a crosstalk compensation by means of a capacitive circuit in (see fig. 7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Sciacero or Arnett by providing a crosstalk compensator to which communication devices can be connected to reduce crosstalk coupling and to enhance clarity of signals by reducing noise.

The combination fails to teach selectively coupling by means of a relay or switch to the capacitive circuit.

Agazzi teaches a non-linear cancellation of signals including echo or cross-talk in conjunction with data signals in (see col. 1 lines 17-20) by using a capacitive circuit with a plurality of capacitors in parallel which can be activated by means of a relay in conjunction with a controller in (see fig. 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Agazzi into that of the combination thus making it possible to activate a crosstalk circuit to prevent noise or interference with a desired signal.

Regarding claims 2-32, 33-36 and 38-47, The combination teaches being able to use a plurality of capacitors in parallel in reducing crosstalk and would have been obvious to one of ordinary skill to use any functional equivalent capacitive means.

Furthermore, the combination for instance Agazzi teaches a plurality of capacitors in parallel under control of a control logic which can activate a capacitor by means of a relay. Crosstalk as defined and well known would be reduced if not canceled by the capacitive circuit taught by the combination.

Regarding claims 33, Admitted prior art of record teaches a digital communication wherein mutual coupling can cause crosstalk and fails to teach a crosstalk compensation circuit made of capacitive means as a form of reducing crosstalk. Reducing crosstalk is notoriously well known.

Sciacero et al. teaches an apparatus for measuring the crosstalk in a cable associated with a network by using capacitive circuit for the purpose of reducing crosstalk caused by coupling effect in (see fig. 3B, col. 3 lines 12-17, col. 5).

Arnett teaches a capacitive crosstalk compensation arrangement for communication connectors wherein a capacitive circuit can be used in preventing crosstalk caused by mutual coupling associated with a plurality of conductors in (see fig. 6 and disclosure of '742). Also, '834 teaches a connector which provides a crosstalk compensation by means of a capacitive circuit in (see fig. 7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Sciacero or Arnett by providing a crosstalk compensator to which communication devices can be connected to reduce crosstalk coupling and to enhance clarity of signals by reducing noise.

The combination fails to teach selectively coupling by means of a relays or switches to the capacitive circuit.

Agazzi teaches a non-linear cancellation of signals including echo or cross-talk in conjunction with data signals in (see col. 1 lines 17-20) by using a capacitive circuit with a plurality of capacitors in parallel which can be activated by means of a relay in conjunction with a controller in (see fig. 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Agazzi into that of the combination thus making it possible to activate a crosstalk circuit to prevent noise or interference with a desired signal. Note that the combination including Agazzi teaches a crosstalk circuit which includes a four conductors system in conjunction with relays.

Regarding claim 48, see the explanation as set forth regarding claim 1 because the system would perform the method steps.

Regarding claims 49-61, see the explanation as set forth regarding claims 2-32, 33-36, 38-47.

Regarding claim 62, see the explanation as set forth regarding claim 1 because the system would perform the method steps by using a computer readable medium.

Regarding claims 63-65, see the explanation as set forth regarding claims 2-32, 33-36, 38-47.

### ***Response to Arguments***

Appellant arguments filed on 12/19/2003 *in response to the final rejection* have been fully considered but they are not persuasive.

The appellant argued that the combination including Agazzi fails to render the claimed subject matter as set forth in the rejection of the claimed subject matter.

The examiner disagrees because the examiner would like to point out and re-iterate the explanation as set forth in the rejection of the claimed subject matter including the fact that Agazzi teaches a means which can be used to remove near end cross-talk or echo signal including that of (fig. 3 and col. 1 lines 17-21) which uses a plurality of relays in conjunction with capacitors which would be selectively activated either to close or open, by nature the functionality of a switch relay.

Furthermore, even though, not applied in detail, a secondary reference applied Sciacero et al. teaches a crosstalk compensation system wherein capacitors in conjunction with relay switches can be used in reducing crosstalk in (see col. 5, figs.).

Therefore, the able to reduce crosstalk using capacitors coupled to relay switches or switches are indeed rendered obvious by the combination as set forth in the rejection of the claimed subject matter.

### ***Summary of the Invention***

The claimed subject matter can be seen as shown in (see figs.) and characterized by a crosstalk compensator (200 of figs. 3-4).

Fig. 5, a cross-talk compensation circuit is shown in (fig. 5 @200) which comprises of a plurality of capacitors.

Figs. 6-8, a cross-talk compensation circuit is shown in (see 200, 201, 202) respectively which comprises of a plurality of capacitors with respective relays.

Figs. 9-13, a cross-talk compensation circuit can comprise of a plurality of capacitors in addition to relays (switches) to be controlled by a processor.



***Response to Arguments***

The appellant argued in (see pages 15-17 of appeal brief) that the combination including Agazzi fails to establish a prima facie case of obviousness and has been misapplied.

The examiner disagrees because the appellant has attacked the explanation as set forth in the rejection of the claimed subject matter based solely on the "Agazzi" reference.

Claim 1 calls for a plurality of capacitors in conjunction with relays (switches) to be selectively controlled by a processor or a logic means to reduce cross-talk.

The explanation as set forth in the rejection of for instance claim 1 uses a plurality of references including the admitted prior art as a base eventhough it was not necessary.

"Arnett", a secondary reference teaches a cross-talk compensation arrangement for communication devices such as shown in (see fig. 3 of present invention) comprising of a plurality of capacitors with an embodiment similar to (see fig. 5 of present invention).

"Arnett" fails to teach a relay mechanism to selectively activate capacitors (see embodiment for instance (see fig.9 of present invention)).

Thus, the examiner supplemented the teaching of Arnett with that of Agazzi to teach that an echo canceller mechanism such as shown in (see fig. 3, fig.1 and col. 1 lines 17-21) wherein a plurality of capacitors in conjunction with relays can be activated

to reduce cross-talk due to interference coming from another transmission medium to meet the claim.

'Sciacero et al.', a secondary reference applied teaches cross-talk compensation means in (see fig.3B, fig.3D, fig.7 and other figs.) wherein a cross-talk circuit or compensation means can provide selective connection of cancellation capacitors in (see col. 3 lines 57-59) in communication networks/systems including LAN with interference caused by mutual coupling. Furthermore, (see col. 5 line 42-col. 6 line 4), Sciacero teaches selectively activating relays in conjunction with capacitors under control of a switching matrix to reduce cross-talk.

The combination including the admitted prior art and Sciacero meets the claimed limitation without the need for Agazzi.

The appellant failed to address the reference "Sciacero" based on the arguments presented in the appeal brief.

The appellant argued in (see page 17-18) that the prior art of record Agazzi applied fails to teach mismatches in mutual coupling created with other conductors or in other words cross-talk compensation induced by another wire pair onto another wire.

The examiner disagrees because (see col. 1 lines 17-21) teaches interference caused by one transmission channel onto another channel in (see fig. 1) thus needing a cross-talk compensation circuit (echo-canceller) to remove cross-talk

The appellant argued that in (see pages 19-22 and pages 26-28 of appellant's argument) that there is no express teaching whatsoever regarding the functionality of the capacitors, relays and switch control logic shown in (see fig. 3) and therefore, the examiner cannot make assumptions about the functionality associated with these elements.

The examiner strongly disagrees with the appellant, Agazzi does not need to detail all the functionalities associated with its echo-canceller elements because the examiner believes the circuit is self explanatory. According to Agazzi, its echo canceller shown in (see fig. 3) serves to control or reduce cross-talk, noise or echo signal.

Thus, all its elements including the capacitors with its relay and the switch cross logic serves to provide cross-talk reduction or compensation. The switches would either be in a closed mode or an open mode, which by nature is how it functions. Furthermore, the mode in which the switch stays either closed or open is in part controlled by switch control logic. The appellant has questioned the functionality of a switch control logic because according to the appellant, it's not explicitly defined in the disclosure of Agazzi but the examiner's position is that the switch control logic would control the switch to open or close. The fact that the compensation circuit of the present invention would function by restricting the switch or relay to one position either one of a close or open position (always) is not specifically directed to the claimed subject matter.

The appellant argued in (see pages 23-25) that Agazzi teaches away from the claimed invention because it's directed to a single wire pairs and therefore, no motivation to combine with the secondary references applied.

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Eventhough, it's true that Agazzi is directed to a two-wire pair, Agazzi teaches canceling cross-talk caused by interference from one channel to another channel in (see col.1 lines 17-21 of Agazzi) just as the present invention seems to solve canceling interference caused by one channel path to another channel path. Furthermore, the cited secondary references combined with Agazzi are analogous and directed to solving the same problem i.e. cross-talk.

In summary, the examiner believes that cross-talk compensation as claimed by the present invention is rendered obvious by the cited references.

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

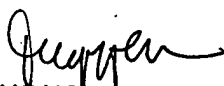
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December 23, 2004

Conferees

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